

EF



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/073,070	02/07/2002	Sang Bae Kim	ASIA14.001AUS	2399
20995	7590	01/30/2004	EXAMINER	
KNOBBE MARTENS OLSON & BEAR LLP 2040 MAIN STREET FOURTEENTH FLOOR IRVINE, CA 92614			ASINOVSKY, OLGA	
			ART UNIT	PAPER NUMBER
			1711	

DATE MAILED: 01/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/073,070

Applicant(s)

KIM ET AL.

Examiner

Olga Asinovsky

Art Unit

1711

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10 December 2003.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,3-9,11-13,16-27,30-32 and 34-46 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-9,11-13,16-27,30-32 and 34-46 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All   b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)                      4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)                      5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_                      6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

The cancellation of claims 2, 10, 14-15, 28-29 and 33 is noted.

The applicants amend independent claims 1 and 26 by including the statement that "said ethylene-alpha-olefin elastomer has an ethylene content of from about 30 wt% to about 75 wt% without diene components."

New search has been made.

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 3-9, 11-13, 16-27, 30-32 and 34-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schauder U.S. Patent 6,383,439 in view of Oliver U.S. Patent 4,594,386. O.A.

Schauder'439 reference has been discussed under the 102(e) rejection at pages 2-4 of the office action mailed on 02/06/03, paper No. 7 and is incorporated here by reference.

Schauder'439 discloses chemically modified elastomers and blend thereof with polyolefins or polyamides or a mixture thereof for obtaining a polymer composition, column 1, lines 48-66 and column 2, lines 8-12. An ethylene-higher alpha-olefin elastomer comprises a first polymer fraction having an ethylene

content of from 30 to 80 wt% and a diene content of from 1.0 to 12 wt%, and a second polymer fraction having an ethylene content of from 40 to 90wt% and a diene content of from 0 to 12 wt%, column 1, lines 49-62. The ethylene-higher alpha-olefin polymer is grafted with an unsaturated organic compound containing at least one carbonyl group, column 1, lines 49-52, for the present claims. The grafted monomer having a carbonyl group such as a maleic anhydride is readable in the present claims 1, 21, 26 and 38. The ethylene content for said ethylene-alpha-olefin polymer is from 30 to 80 and from 40 to 90 wt.%, column 1, lines 56 and 61, for the present claims 16-18 and 34-36. The grafting initiator such as a dialkyl peroxides are readable in the present claims 1 and 5. The graft polymerization is performed by a melt reaction with a peroxide and an unsaturated compound having a carbonyl function in a twin screw extruder having four temperature zones of 170 to 210 C, column 7, example 1, for the present claims 1 and 8. The conditions for grafting are readable in the present claims. The grafted polymer and the additional polymers are combined by melt blending in the extruder, column 5, lines 10-13. The drying condition is inherent in Schauder invention. Schauder'439 discloses that the grafted polymers are using as modifiers for polyamide, column 5, line 20.

The difference between the present claims and Schauder'439 is the requirement in the present claims 1 and 26 that an ethylene-alpha-olefin elastomer is without diene component. Schauder discloses that a diene component can be present in the content of from 1.0 to 12 wt%, column 1, line 57.

Oliver'386 discloses a composition comprising a blend of a polyamide and grafted ethylene-propylene copolymer rubber, abstract. The ethylene-propylene copolymer rubber is EPM rubber having the ratio of ethylene to propylene in the range of 55-88 moles ethylene to 45-12 moles propylene, column 2, lines 1-3. the grafted EPM rubber is in the form of fine particles, column 1, line 55. The grafted EPM rubber is readable in the amended claims 1 and 26, wherein an ethylene-alpha-olefin elastomer is without diene component. The maleic anhydride grafted EPM provides an improvement in the impact strength of the nylon-polyamide, column 13, lines 40-41.

Both references disclose using a grafted ethylene-alpha-olefin elastomer as a modifier for improving the compatibility and impact strength between the EPM rubber in Oliver or EP(D)M rubber in Schauder with polyamides. It would have been obvious to one of ordinary skill in the art to replace the part of an ethylene-alpha-olefin elastomer having a diene content of from 1.0-12 wt% in the Schauder's invention with a EPM rubber in Oliver invention for the purposes to eliminate a diene component, and thereby, obtain the claimed requirement. The prima facie case of obviousness is that an ethylene-alpha-olefin-diene rubber having a diene content of from 1.0-12 wt% in Schauder and a EPM rubber in Oliver has very close elastomeric properties since both EP(D)M in Schauder and EPM in Oliver could have the same ethylene contents that are readable in applicants' claims. A

***Claim Rejections - 35 USC § 112***

3. Claim 32 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
4. Claim 32 recites the limitation "ethylene-propylene-diene rubber, ethylene-butene-diene rubber, ethylene-octene-diene rubber, and mixture thereof" in lines 3-4. There is insufficient antecedent basis for this limitation in the claim. Claim 32 is depending on claim 26. Claim 26 excludes a diene component by the present amendment by the statement "without diene components."
5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Art Unit: 1711

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Olga Asinovsky whose telephone number is 571-272-1066. The examiner can normally be reached on 9:00 to 5:30 pm.

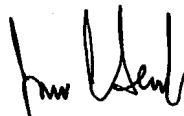
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on 571-272-1078. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Olga Asinovsky  
Examiner  
Art Unit 1711

O.A.

O.A.  
Jan. 25, 2004



James J. Seidleck  
Supervisory Patent Examiner  
Technology Center 1701